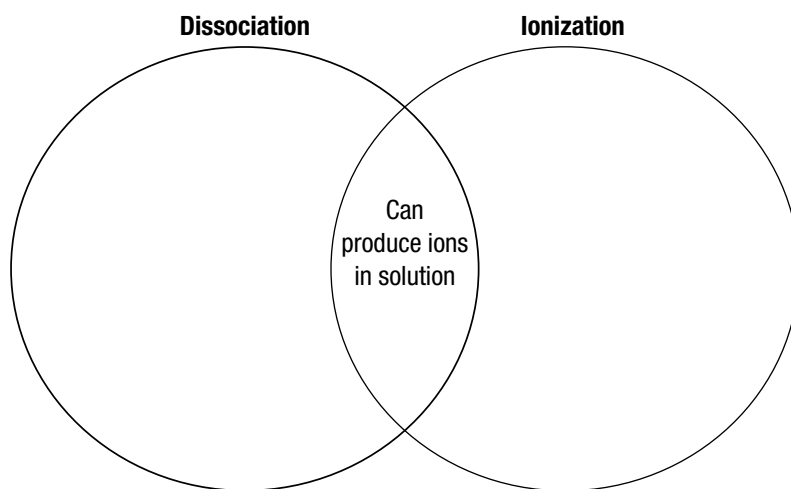


**Chapter 8 Solutions, Acids, and Bases****Section 8.1 Formation of Solutions****(pages 228–234)**

*This section explains the parts of a solution, the processes that occur when compounds dissolve, and how the properties of a solution compare with those of its solvent and solute.*

**Reading Strategy (page 228)**

**Comparing and Contrasting** Contrast dissociation and ionization by listing the ways they differ in the Venn diagram below. For more information on this reading strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

**Dissolving (page 229)**

1. Define a solution. \_\_\_\_\_
2. Circle the letter that identifies a substance whose particles are dissolved in a solution.
  - a. solvent
  - b. solute
  - c. solid
  - d. ion
3. Circle the letter that identifies the solvent in air.
  - a. oxygen
  - b. carbon dioxide
  - c. nitrogen
  - d. argon
4. The process in which an ionic compound separates into ions as it dissolves is called \_\_\_\_\_.
5. The process in which particles dissolve by breaking apart and scattering is called \_\_\_\_\_.
6. A(n) \_\_\_\_\_ is transferred from each HCl molecule to a water molecule when hydrogen chloride gas dissolves in water.
7. Is the following sentence true or false? Dissolving by ionization is a physical change. \_\_\_\_\_

**Chapter 8 Solutions, Acids, and Bases****Properties of Liquid Solutions (page 231)**

8. What physical properties of a solution can differ from those of its solute and solvent?
- a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
9. Compare the conductivities of solid sodium chloride and saltwater. \_\_\_\_\_
10. Circle the letters that identify what happens to water as it freezes.
- a. The water molecules become more organized.
  - b. The water molecules become more disorganized.
  - c. The water molecules ionize.
  - d. The water molecules arrange themselves in a hexagonal pattern.

**Heat of Solution (page 232)**

11. Dissolving sodium hydroxide in water is a(n) \_\_\_\_\_ process, as it releases heat.
12. Dissolving ammonium nitrate in water is a(n) \_\_\_\_\_ process, as it absorbs heat.
13. Is the following sentence true or false? Breaking the attractions among solute particles and the attractions among solvent particles releases energy. \_\_\_\_\_
14. Describe heat of solution. \_\_\_\_\_

**Factors Affecting Rates of Dissolving (page 234)**

15. How are rates of dissolving similar to rates of chemical reactions? \_\_\_\_\_
16. Why does powdered sugar dissolve in water faster than granulated sugar? \_\_\_\_\_
17. Heating a solvent \_\_\_\_\_ the energy of its particles, making them move faster on average, and \_\_\_\_\_ the rate at which a solid solute can dissolve in the solvent.
18. Explain how stirring or shaking a mixture of powdered detergent and water can affect the rate of dissolving. \_\_\_\_\_